

PHILIPS

DP 70

**MULTI-PURPOSE
70/35 mm
FILM PROJECTOR**

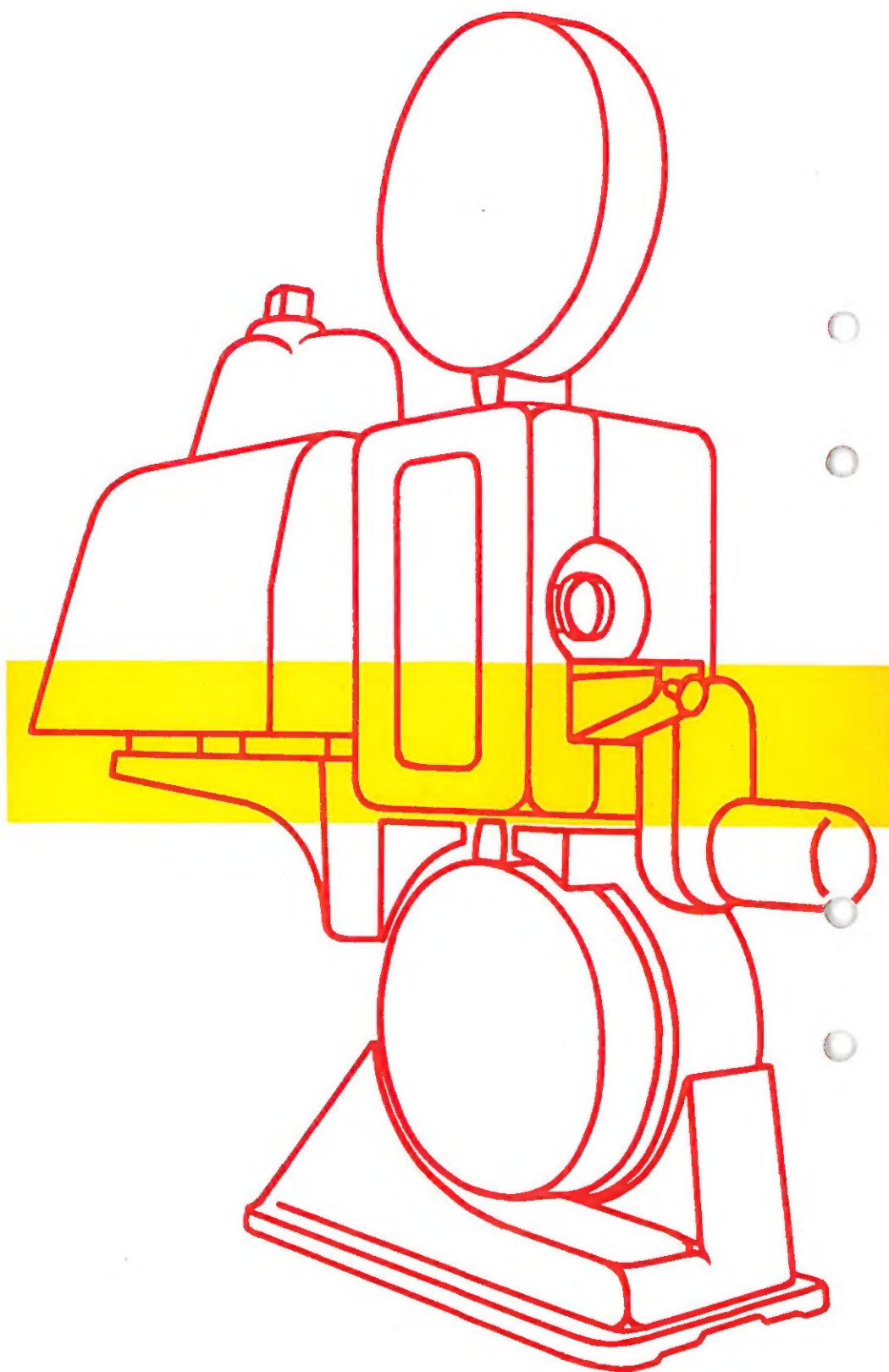


DESIGNED FOR THE FUTURE....AVAILABLE TO-DAY

- **DP 70**, the first 70 mm projector in the world...
- **DP 70**, developed in co-operation with the American Optical Co., Southbridge, Mass., U.S.A., the inventors of the Todd-AO system...
- **DP 70**, built for 70 and 35 mm...
- **DP 70**, the projector which to date*) has been used for the world premieres of all 70 mm films...
- **DP 70**, the projector used since October 1955 in the Rivoli cinema, Broadway, New York, showing exclusively 70 mm films without a single hitch...

DP 70

- **DP 70**, the projector which enables the same 70 mm copy to be shown several hundred times (in the Dominion, London, and the Gaumont, Manchester, already more than a thousand times) without any damage to the film or operating trouble...
- **DP 70**, the quality projector...
- **DP 70**, the ideal 70/35 mm projector, not only for today, but also for the future...



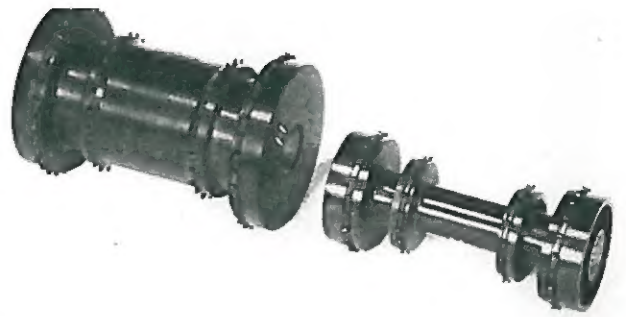


Fig. 1

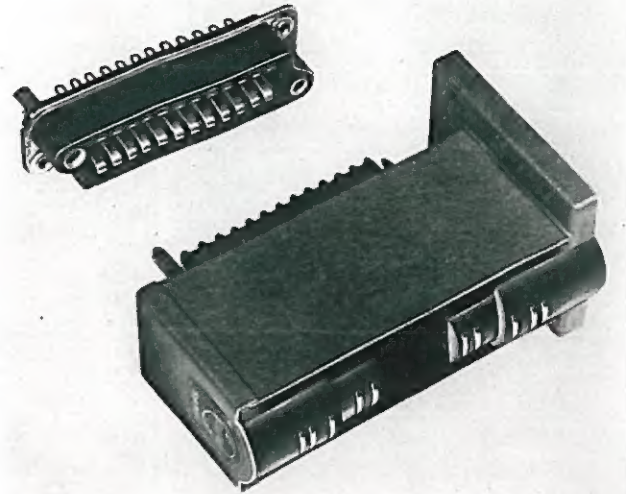


Fig. 2



PHILIPS

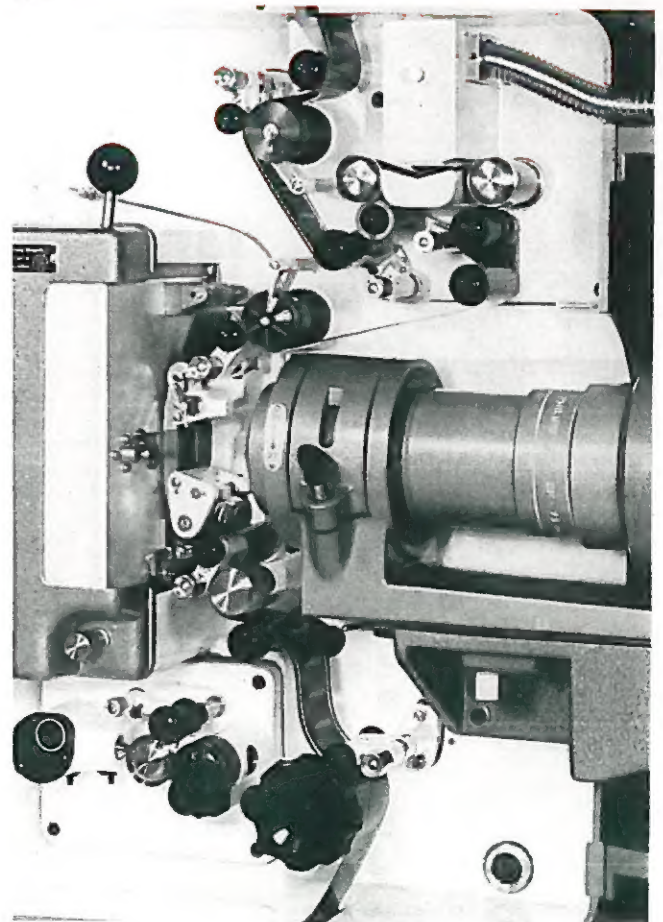
MULTI-PURPOSE

The multi-purpose projector DP 70 is suitable for use with all 70 mm film systems such as Todd-AO, Super Technirama 70, and Camera 65, and all the usual 35 mm systems in which the film travels vertically, such as standard 1:1.37, CinemaScope with optical sound tracks, CinemaScope with 4 magnetic tracks, Mag-optical copies and WideScreen copies.

It has been possible to achieve this versatility by designing the DP 70 specially as a 70 and 35 mm projector, which also entails that full attention could be paid to the necessity of a rapid change-over from 70 mm to 35 mm film. The number of operations needed to pass from one system to the other is so small that the whole job can be performed in a matter of minutes. Mistakes that could damage the film are practically impossible: for example, the sprockets (fig. 1) and the fire traps are suitable for both 70 and 35 mm films without alteration, and the magnetic cluster (fig. 2) and the sound drums are suitable for 6-channel 70 mm films and 4-channel 35 mm films. The film path is the same for 70 mm film as for 35 mm film with magnetic sound tracks, so the operator soon becomes accustomed to threading the film. The film path (fig. 3) is kept very simple by reducing the number of guide rollers to a minimum.

The complete collection of replacement parts is kept in a handy storage case (fig. 4), so that a single glance is enough to see whether all the parts have been replaced. Among other things, this case contains

Fig. 3



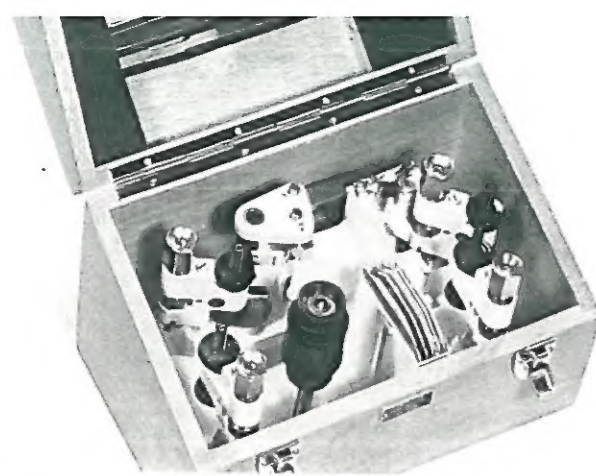


Fig. 4

eight aperture plates for all possible 70 and 35 mm systems. Thanks also to the very efficient water cooling, which keeps the aperture plate cool, the aperture plate can be replaced very quickly, even without tools.

The lenses can also be very quickly replaced. The focussing is not altered when the lens is changed, and the difference between the position of the centre line of 70 and 35 mm films is automatically compensated for.

The film speed can be changed from 24 to 30 frames per second (fig. 5), so that all 70 mm films can be projected.

The film spools (fig. 6) are constructed so that the adjustment of the friction is the same for 70 mm as for 35 mm film.

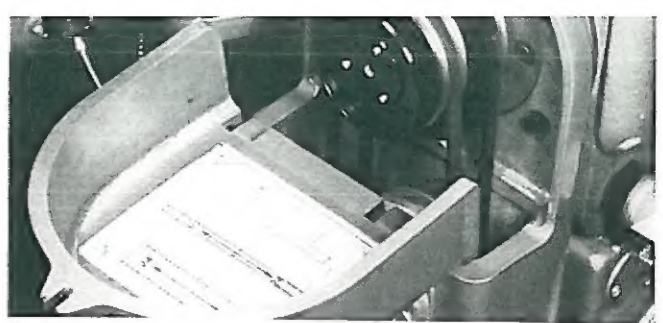


Fig. 5

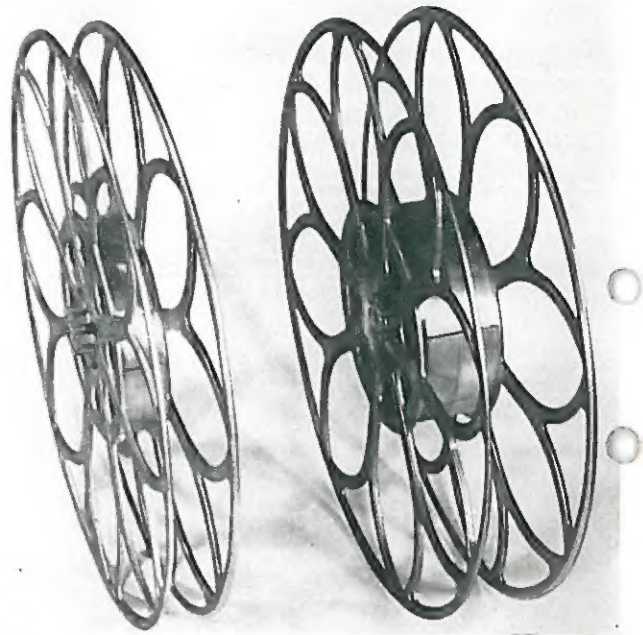


Fig. 6



IDEAL FOR 70 mm FILM

70 mm film makes very large demands on a projector. Not only is the film twice as wide (fig. 7), but the height of each frame is 5 perforations instead of 4, so that at 24 frames/sec the film speed is 25% more than normal, and at 30 frames/sec 56% higher. The forces arising during the film transport are therefore greater, and this has been taken fully into account in the construction of the DP 70.

The film gate (fig. 8) is curved, so that the film has a great stiffness in the transverse direction. This prevents buckling of the film, and thus improves the sharpness of the picture.

The shaft of the Maltese cross (fig. 9) is supported by bearings on both sides of the sprocket, thus giving a rock-steady projection.

The projector, as well as the stand and the mounting table, are of a sturdy construction, thus preventing vibrations due to the energetic film transport. The lens holder (fig. 10) is also very solidly constructed in order to keep the big (4") lenses needed for 70 mm projection free from vibration, and in order to be able to focus them with the greatest possible accuracy. All shafts and gear-wheels are very stable. The use of exclusively spiral gear transmission with alternate steel and novotext wheels ensures quiet running (fig. 11).

The whole mechanism is thoroughly lubricated automatically by a built-in gear-wheel oil pump.

The life of the projector constructed in this way is even longer than that of a normal 35 mm projector,

Fig. 7

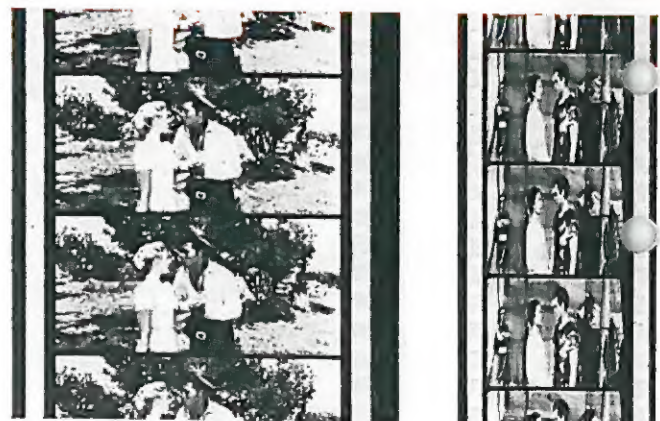
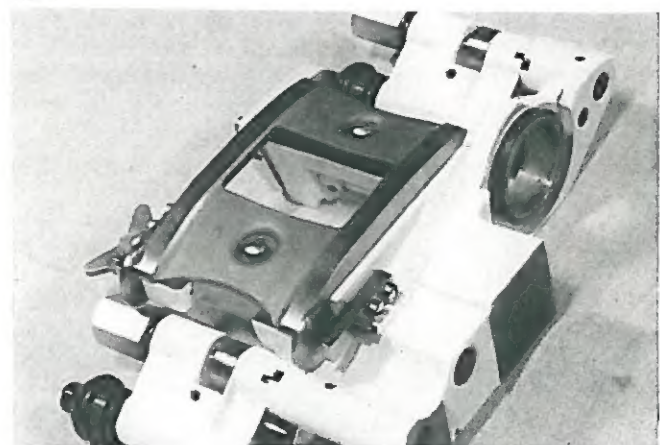


Fig. 8



despite the heavier load put on it by the 70 mm film. Special care has been taken with the film path, because of the great cost of 70 mm prints. The number of rollers has been kept to a minimum. The fire-trap rollers (fig. 12) run in ball bearings. All rollers are grooved, so that scratching is impossible. A large number of teeth of the 30-tooth sprockets are always engaged, so that the strain on the perforations is as small as possible.

Fig. 9

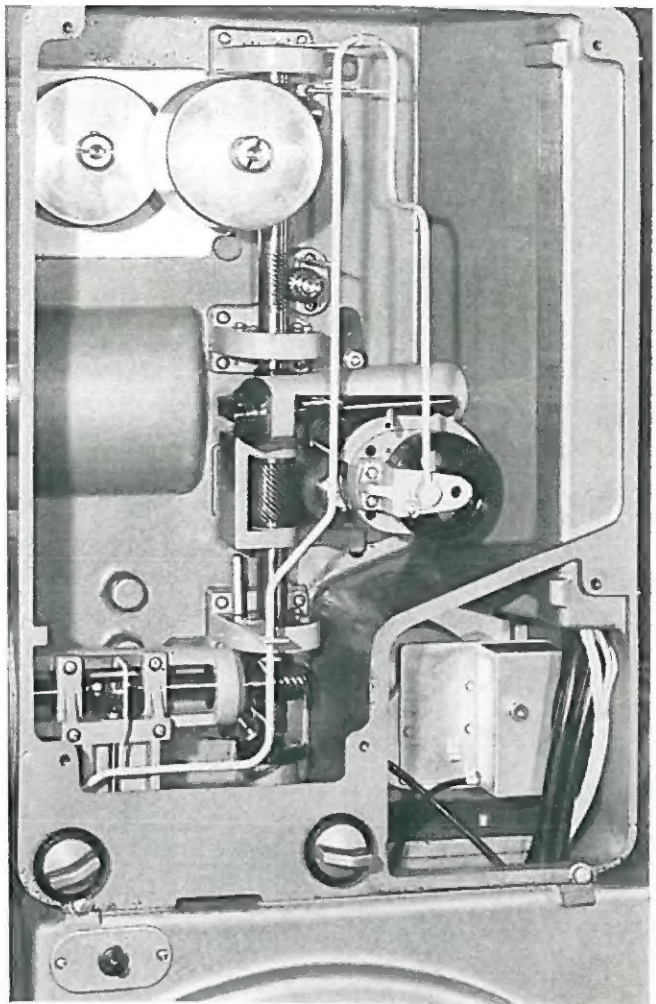
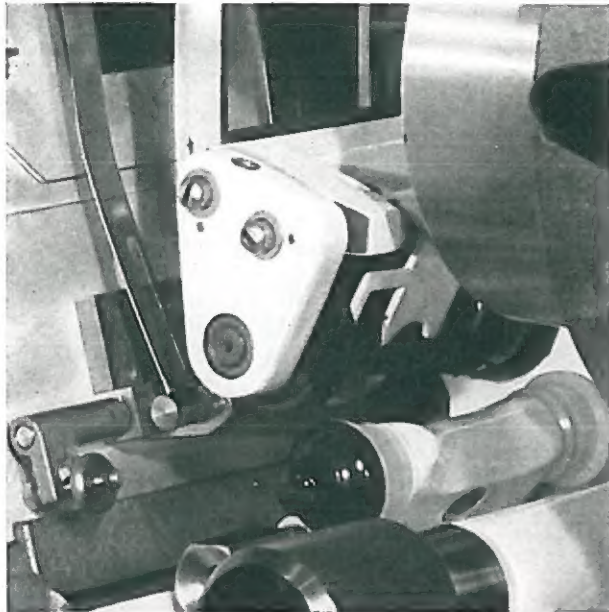


Fig. 11



MAXIMUM LIGHT INTENSITY

A great light intensity is needed to project the big pictures in 70 mm theatres and drive-ins. The DP 70 can be easily adapted to use all well known types of lamp houses. The combined water and air cooling ensures that even very high light intensities will not damage the film by drying out the film material. The projector is so constructed that even for the biggest lamp houses the beam reaches the aperture plate without obstruction. The single-blade conical shutter (fig. 13) gives the maximum possible efficiency.

Fig. 10

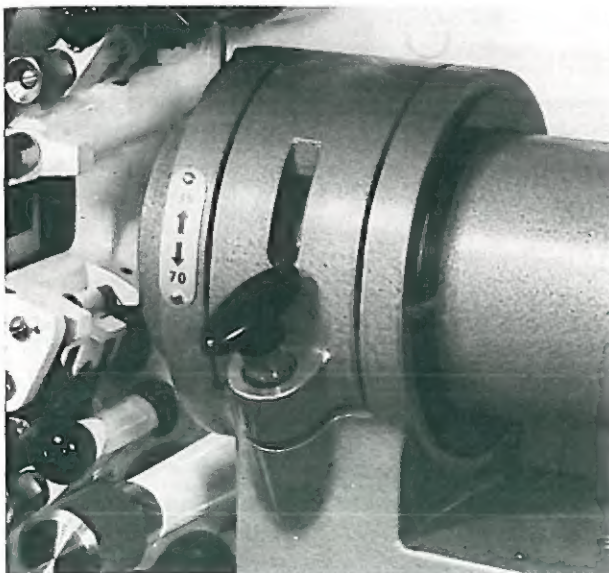


Fig. 12

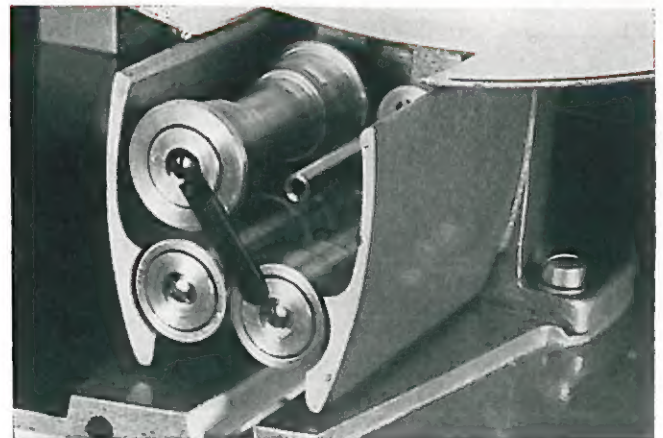
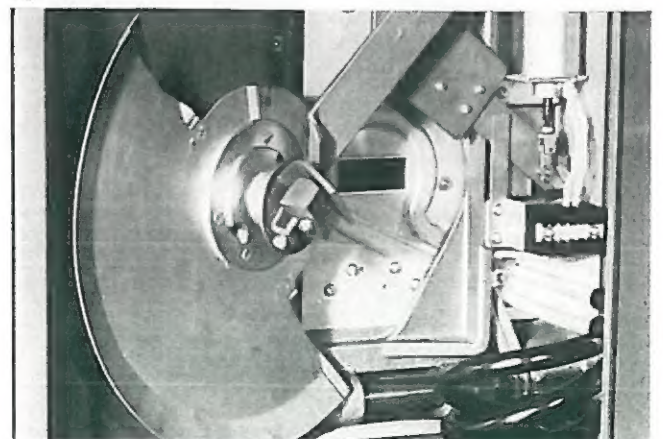


Fig. 13



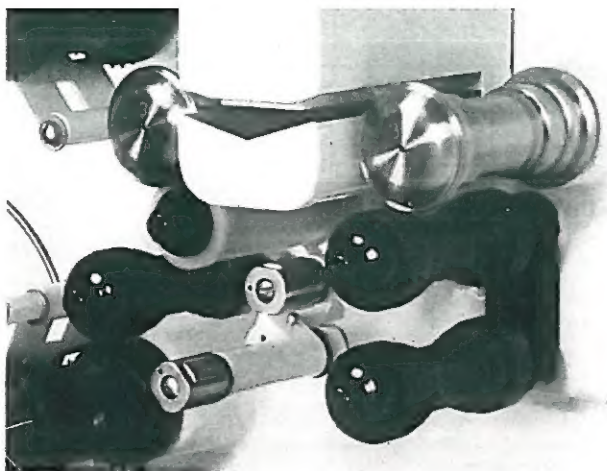


Fig. 14

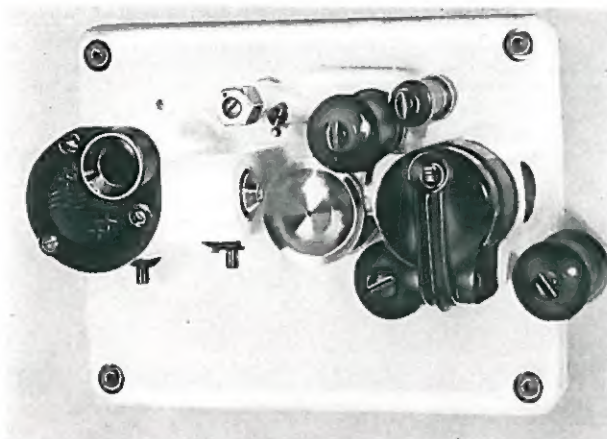


Fig. 15



EXCELLENT SOUND REPRODUCTION

Thanks to the use of a driven sprocket between the upper spool box and the magnetic soundhead (fig. 14), of two flywheels and a carefully designed filter, the magnetic reproduction is completely free from wow and flutter. Equal care has been taken with the optical soundhead (fig. 15) for 35 mm film, a unique Philips design whereby the film itself acts as a practically inertia-free buffer, eliminating all the irregularities caused by the teeth of the take-up sprocket engaging in the film perforations.

The sound track is projected with a magnification of 13.5 times on the scanning slit. The magnified sound track is visible through an inspection window, so that the correct position of the sound track with respect to the slit can be accurately adjusted.

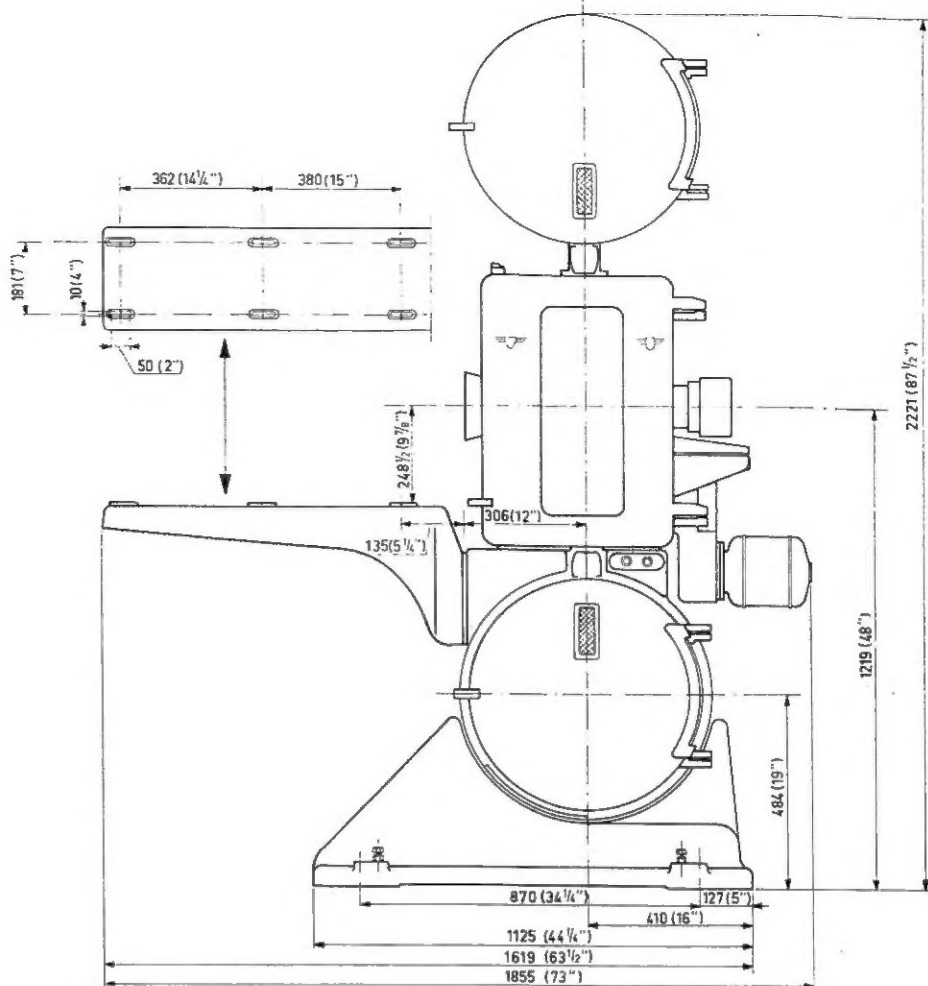
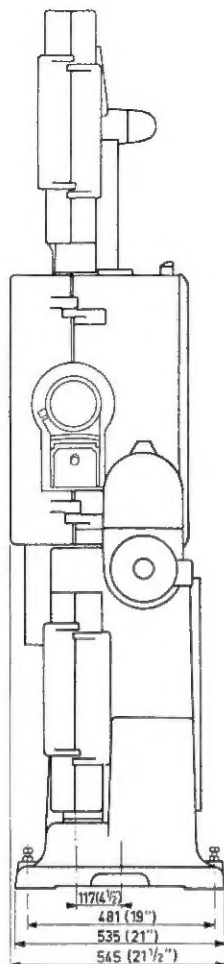
SIMPLE OPERATION

The threading of the film is very simple, thanks to the small number of rollers and their logical and well spaced arrangement. The pad rollers are closed by

means of a press button. The skate pressure in the filmgate is centrally adjusted by means of a single knob. The lenses are quickly and easily replaced, and do not alter their focus when changed. The projector is switched on and off by push buttons. A single push button changes the picture and the sound over simultaneously from one projector to the other.

LITTLE MAINTENANCE

The projector is easy to keep clean, thanks to the well spaced components, the hard smooth lacquer and the practical illumination of the film path. In practice, lubrication consists in changing the oil once every 250 hours.



TECHNICAL DATA

Capacity of the spools:

3000 ft (900 m) for 70 mm film
3600 ft (1100 m) for 35 mm film

Motor:

1460 r.p.m. at 50 c/s
1/4 h.p.
Mains voltage 110 or 220 V
Mains frequency 50 or 60 c/s

Photocell:

type 3554: supply 90 V

Exciter lamp:

type 7251 C 5 V-4 A

Dowser supply:

90 V ===

Water consumption:

1.760 Pints/min (1 liter/min)

Type numbers and weights:

Shipped in 8 boxes

type no.	description	weight	
		nett	gross
EL 4000/00	complete 70/35 film installation comprising: projector mechanism with built-in optical and magnetic soundhead, stand, mounting table and spool cases, for 50 c/s mains.	1102 lbs. (500 kg)	1823 lbs. (827 kg)
EL 4000/01	As type 4000/01, but for 60 c/s.	1102 lbs. (500 kg)	1823 lbs. (827 kg)

GREAT-BRITAIN

Dominion - London
 Gaumont - Manchester
 Drake - Plymouth
 Astoria - Brighton
 West End - Birmingham
 Gaumont - Glasgow
 Majestic - Leeds
 Queens - Newcastle
 Odeon - Sheffield
 Odeon - Bristol
 Odeon - Liverpool
 Victoria - Edinburgh
 Capitol - Cardiff
 Odeon - Nottingham
 Columbia - London
 Cinema - London
 Technicolor - London
 Lab - London
 Ritz - Oxford
 Savoy - Leicester
 Forum - Southampton
 Odeon - Hanley
 Regal - Glasgow
 Carlton - Nottingham
 Olympia - Cardiff
 Regal - Hull
 Regal - Edinburgh
 Bristol - Birmingham
 Odeon - Bournemouth
 Metropole (Victoria) - London
 Odeon - Aberdeen
 Astoria - London
 Odeon - Middlesborough
 Gaumont - Norwich
 Ritz - Leeds
 White Ladies - Bristol
 Capitol - Dundee
 Scala - Worcester
 Empire - London
 Deansgate - Manchester
 Picture House - Manchester
 Futurist - Liverpool
 Cinema - Portsmouth
 Odeon - Belfast
 Ritz - Belfast
GERMANY
 Savoy - Hamburg
 Royal Palast - Munich
 Scala - Mannheim

Admiral - Nuremberg
 Palast - Hanover
 Rivoli - Düsseldorf
 Savoy - Frankfurt/M
 Grand Palast - Frankfurt/M
 MGM Theater - Berlin
 MGM Theater - Stuttgart
 Atrium - Munich
 City - Münster
 Fuerstenhof - Frankfurt/M
 Lichtspiele - Frankfurt/M
 Filmpalast - Karlsruhe
 City Film - Stuttgart
 Theater - Dusseldorf
 Gloria Palast - Dusseldorf
 Tonhalle - Dusseldorf

ARGENTINE
 Luxor - Buenos Aires

MALTA
 Plaza - Sliema

AUSTRALIA
 Plaza - Adelaide
 Mayfair - Sydney
 Esquire - Melbourne
 Paris - Sydney
 St. James - Brisbane

NEW ZEALAND
 State Theatre - Christchurch
 Plaza - Auckland
 State Theatre - Wellington

JAPAN
 Koma Stadium - Osaka
 Yurakuza - Tokyo

ITALY
 Adriano - Rome

EIRE
 Adelphi - Dublin

JAMAICA
 Regal - Kingston

SPAIN
 Paz - Madrid
 Kursaal - Barcelona

DENMARK
 Falco Bio - Copenhagen
 Europa Bio - Copenhagen
 Palladium - Copenhagen
 Imperial - Copenhagen
 Bronobyerne - Copenhagen
 World Cinema - Copenhagen

NORWAY
 Colosseum - Oslo

SWEDEN
 Ritz - Stockholm
 Scania - Malmö
 Palladium - Malmö
 Garbio (Ricardo) - Stockholm
 Astoria - Stockholm
 Centrum - Eskilstuna
 Palladium - Stockholm
 Ribo (Capitol) - Stockholm

SWITZERLAND
 Apollo - Zurich

FRANCE
 Palais des Festivals - Cannes
 Gaumont - Paris
 Palace - Nice
 Rialto - Nice
 Paris Palace - Vichy
 Theatre ABC - Rouen
 Normandy - Rouen
 Paquebot "France"

BELGIUM
 Quelin - Antwerp

HOLLAND
 Asta - The Hague
 Casino - Den Bosch
 Chicago - Eindhoven
 Corso - Rotterdam
 Metropole - The Hague

AUSTRIA
 Gartenbau - Vienna
 Kino - Salzburg
 Stadtkino - Salzburg

Wellspiegel - Vienna
 Tabor - Vienna

PORTUGAL
 Monumental - Lisbon

ICELAND
 Laugáras Bio - Reykjavik
 Hákolá - Reykjavik

RUSSIA
 Forum - Moscow

CHINA
 Broadway Theatre - Kowloon
 Theatre - Kowloon
 Royal Queens Theatre - Hongkong
 Theatre - Peking

PHILIPPINES
 Rizal - Manila
 Galaxy - Manila

IRAQ
 Cinema Houses Ltd. - Baghdad

BRAZIL
 Cine Windsor - Sao Paulo
 Rio Branco - Sao Paulo
 Cine Movetec - Porto Alegre

VENEZUELA
 Cine Olimpo - Caracas

MEXICO
 Cine Hidalgo - Poza Rica

SOUTH-AFRICA
 Drive-in (Germiston) - Germiston

VIETNAM
 Rex Theatre - Saigon

FINLAND
 Bio Bristol - Helsinki

THAILAND
 Chalerms Kheth Theatre - Bangkok



**THEATRES EQUIPPED WITH
 PHILIPS 70/35 mm INSTALLATIONS
 UP TO AUGUST 1960**

U.S.A. AND CANADA

Ritz Theatre - Albany
 St. James Theatre - Asbury Park
 Roxy Theatre - Atlanta
 Virginia Theatre - Atlantic City
 New Theatre - Baltimore
 Liberty Theatre - Beaumont
 Astor Theatre - Boston
 Gary Theatre - Boston
 Saxon Theatre - Boston
 Century Theatre - Buffalo
 Granada Theatre - Buffalo
 McVickers Theatre - Chicago
 State Lakes Theatre - Chicago
 Todd's Cinestage - Chicago
 Valley Theatre - Cincinnati
 Loew's Ohio Theatre - Cleveland
 Hunt's Cinestage - Columbus
 Tower Theatre - Corpus Christi
 Tower Theatre - Dallas
 Wynnewood Theatre - Dallas
 Hunt's McCook Theatre - Dayton
 Center Theatre - Denver
 Mercury Theatre - Detroit
 United Artists Theatre - Detroit
 Clyde Theatre - Ft. Wayne
 Strand Theatre - Hartford
 Carthay Circle Theatre - Hollywood
 Egyptian Theatre - Hollywood
 Kuhio Theatre - Honolulu
 Tower Theatre - Houston
 Uptown Theatre - Houston
 Lyric Theatre - Indianapolis
 Five Points Theatre - Jacksonville
 Capri Theatre - Kansas City

Capitol Theatre - Little Rock
 Strand Theatre - Lexington
 Brown Theatre - Louisville
 Loew's 170St. Theatre - Miami Beach
 Sheridan Theatre - Miami Beach
 Strand Theatre - Milwaukee
 Academy Theatre - Minneapolis
 Bellevue Theatre - Upper Montclair
 Alouette Theatre - Montreal, Canada
 Panorama Theatre - New Orleans
 Criterion Theatre - New York
 Loew's State Theatre - New York
 Rivoli Theatre - New York
 Warner Theatre - New York
 State Theatre - New York
 Cooper Theatre - Oklahoma City
 Boyd Theatre - Omaha
 Goldmark Theatre - Philadelphia
 Midtown Theatre - Philadelphia
 Vista Theatre - Philadelphia
 Nixon Theatre - Phoenix
 Warner Theatre - Pittsburgh
 Broadway Theatre - Pittsburgh
 Elmwood Theatre - Portland
 Willow Lawn Theatre - Providence
 Monroe Theatre - Richmond
 Alhambra Theatre - Rochester
 Villa Theatre - Sacramento
 Broadway Theatre - Salt Lake City
 Capri Theatre - San Antonio
 Alexandria Theatre - San Diego
 Coronet Theatre - San Francisco
 Blue Mouse Theatre - San Francisco
 Saenger Theatre - Seattle
 Ambassador Theatre - Shreveport
 Pageant Theatre - St. Louis
 Syosset Theatre - St. Louis

Shoppingtown Theatre - Syracuse
 Eckel Theatre - Syracuse
 Britton Theatre - Tampa
 Tivoli Theatre - Toronto
 Ritz Theatre - Tulsa
 Stanley Theatre - Vancouver
 Uptown Theatre - Washington
 State Theatre - Youngstown
 Ritz Theatre - Birmingham
 MGM Theatre - Birmingham
 Screen Directors Guild Theatre - Culver City
 Florida Theatre - Hollywood
 Houck's Patio Theatre - Miami
 Esquire Theatre - New Orleans
 Ben-Hur Theatre - St. Louis
 Riviera Theatre - Denver
 Colony Theatre - Rochester
 Palace Theatre - Cleveland
 New Cooper (Harber) Theatre - Cleveland
 Hollywood Theatre - Oklahoma City
 Stanley Theatre - Portland
 Rogers Theatre - Philadelphia
 Strand Theatre - Chattanooga
 Warner Theatre - Madison
 Music Box Theatre - Washington
 United Artists Penn Theatre - Portland
 Capitol Theatre - Pittsburgh
 Bay Shore Theatre - Cincinnati
 Palace Theatre - Long Island
 Music Box Theatre - Chicago
 Strand Theatre - Seattle
 Westhampton Theatre - Vancouver, Canada
 Bronxville Theatre - Richmond
 Century Theatre - Bronxville
 Minneapolis